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09/663,793	09/18/2000	Shawn P McAllister	53921/82	4429

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EXAMINER

SHEW, JOHN

ART UNIT PAPER NUMBER

2664

DATE MAILED: 01/16/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/663,793

Applicant(s)

MCALLISTER ET AL.

Examiner

John L Shew

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 44-63 is/are allowed.
- 6) ☒ Claim(s) 1-14, 23-30, 37-40, 64 and 76 is/are rejected.
- 7) ☐ Claim(s) 15-22, 31-36, 41-43, 65-75 and 77-87 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/18/2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 17 line 22 discusses Finite State Machine 10. The disclosure preceding and following this point pertains to Finite State Machine 5. Change in FSM number appears inconsistent.

Page 21 TABLE 1, State "Negotiating" and Transition Event "Negotiation Done" indicates a resulting undefined state. This is in conflict to FIG. 2 which specified a resulting state of "Exchanging".

Page 24 line 18, refers to "Figure 1". There is no reference to "Loading (in Full) Done event" in this figure. Suggest correction to "Figure 3".

Appropriate correction is required.

Drawings

1. New corrected drawings are required in this application because drawings are informal. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid

abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

2. Claims 9, 10, 31 and 32 are objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C." Recitation of the members as being "selected from the group comprising of A, B and C" does not restrict the scope and therefore is ambiguous.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 64 and 76 are rejected under 35 U.S.C. 102(e) as being anticipated by Rochberger et al. Rochberger teaches synchronization of topology databases between neighboring nodes (column 2 lines 59-66) in a communications network (column 1 lines 16-22), comprising a routing protocol for exchange of local state information (column 2 lines 39-46), throughout the network (column 3 lines 19-22). The first node initiates a request for topology state synchronization and the second network node receiving the request (column 3 lines 4-7), communicating with the first network node to provide topology state information to the first network node (column 3 lines 7-11). The Rochberger teachings inherently incorporates PNNI protocol version 1.0. The PNNI Specification Version 1.0 page 88 state of "Exchanging" cites "Following as a result of processing Database Summary packets, required PTSEs can be requested". This specifies that advertisement of local state information, which are PTSEs are not withdrawn during the topology state information exchange which are Database Summary packets.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 23, 37, 38, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochberger et al. and further in view of Rekieta et al.

Rochberger discloses a communications network (column 1 lines 8-11), comprising a routing protocol for intermittent advertisement of local state information (column 3 lines 14-18). This routing protocol exchanges topology state information to adjacent neighbor nodes (column 3 lines 19-25). The exchange of topology state information completes when the node and neighboring nodes respectively possess synchronized topology state information (column 3 lines 46-49, column 4 lines 61-63). The exchange of topology state information is performed without withdrawal of advertisement of local state information is inherent Rochberger's invention from the fact Rochberger discloses the PNNI Specification as the basis of his invention. The PNNI Specification Version 1.0 page 88 state of "Exchanging" cites "Following as a result of processing Database Summary packets, required PTSEs can be requested". This specifies that advertisement of local state information, which are PTSEs are allowed during the topology state information exchange which are Database Summary packets.

Rochberger does not disclose a method of failure recovery using an active and inactive routing entity.

Rekieta discloses a method for recovery from a failure (FIG. 9) which affects an active routing entity (Platform Manager 34 contains a Route Table FIG. 4) in a communications network (FIG. 1a). The active routing entity (PM 34) is associated with a network node (SCP 26b) of the communications network. Rekieta discloses an inactive routing entity to which network connections of the network node can be diverted

upon failures (PM 36, column 6 lines 8-14, column 11 lines 17-19). Rekieta discloses execution of an activity switch between the active routing entity and the inactive routing entity (FIG. 9), wherein the network connections are diverted from the active routing entity (PM 34) to the inactive routing entity (PM 36) thereby transforming the inactive routing entity into a newly active routing entity (FIG. 9 step 246). Rekieta discloses the exchanging of state information (FIG. 9 step 236-240), such that state information is synchronized.

Rekieta discloses the use of a separate processor for synchronization (column 2 lines 20-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the PNNI protocol disclosed by Rochberger using the redundant aspects of the communication system of Rekieta. Such a structure would improve the reliability of the communications system.

Claims 37 and 38 are rejected by claim 23 above and further Rochberger inherently in the PNNI Specification Version 1.0 page 15 Section 3.2.3 Paragraph 1 which states "Each node then bundles its state information in PNNI Topology State Elements (PTSEs), which are reliably flooded throughout the peer group".

Claims 39 and 40 are rejected by claims 23, 38 above and further by PNNI Specification Version 1.0 page 17 Section 3.2.3.5 paragraph 2 which states "PTSEs are encapsulated within PNNI topology state packets (PTSPs) for transmission".

3. Claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 24, 25, 26, 27, 28, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochberger and Rekieta as applied to claims 1 and 23 above, and further in view of Blum et al.

Rochberger and Rekieta teaches topology state information transfer between active and standby routing entities. The overall network topology understanding is inherent to the PNNI Protocol. The PNNI Specification Version 1.0 page 15 section 3.2.3 state "A node's topology database consists of a collection of all PTSEs received, which represent that node's present view of the PNNI routing domain. In particular the topology database provides all the information required to compute a route from the given node to any address reachable in or through that routing domain." Rochberger and Rekieta do not teach transmitting such information prior to the failure. Blum teaches active and standby call control computers whereby all data is synchronized in real time, such that the standby call control computer can take control in the event of the active call control computer's failure (column 4 lines 61-67, column 5 lines 1-6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the PNNI protocol disclosed by Rochberger using the communication system redundancy of Rekieta and further with the database synchronization aspects of Blum. Such a structure would improve the reliability of the communications system along with faster recovery in the event of a component failure.

Claims 3 and 25 are rejected by Rochberger by the inherent use of the PNNI protocol.

The periodic transmission of topology state information is specified by the PNNI

Specification Version 1.0 page 17 section 3.2.3.5 which state " ... each node issues

PTSPs with PTSEs that contain updated information. The PTSEs contained in topology

databases are subject to aging and get removed after a predefined duration if they are

not refreshed by new incoming PTSEs ... PTSEs are reissued both periodically and on

an event driven basis."

Claims 4 and 26 are rejected by Blum who teaches transmission of information from the

active entity to the inactive entity (column 8 lines 18-20) wherein the active entity is the

Dynamic Data Replication module which is a subcomponent of the Call Control

Computer.

Claims 5, 6, 7, 27, 28 and 29 are rejected by Blum's teachings of active and standby

call control computers whereby all data is synchronized in real time, such that the

standby call control computer can take control in the event of the active call control

computer's failure (column 4 lines 61-67, column 5 lines 1-6). This identifies data

transfer prior to entity failure. The common understanding of the local status is implicit

to the data synchronization. The periodic transmission of local state information is

inherent to the PNNI protocol specification version 1.0 as priorly rejected on claims 3

and 25. The transmission of information from the active to the inactive entities is

rejected on the basis of prior claims 4 and 26.

Claim 11 and 12 are rejected by Rekieta who teaches active and inactive routing entities each forming a part of the network node as distinct physical components (FIG. 2 Platform Managers 34, 36).

Claim 13 is rejected by Rochberger's teachings which inherently uses the PNNI protocol version 1.0 . The PNNI protocol is designed for use on an ATM communication network with intermittent advertisement of local state information.

Claim 8 and 30 are rejected by Rochberger's teachings which inherently uses the PNNI protocol version 1.0. The PNNI Specification Version 1.0 page 97 specifies the use of Link State Parameters and Nodal State Parameters.

Claims 9 and 10 are rejected by Rochberger's teachings which inherently uses the PNNI protocol version 1.0. The PNNI Specification Version 1.0 page 97 specifies link state parameters include direction characteristic, port identifier and nodal state parameters of input/output port identifiers, nodal radius, peer group. Further, the PNNI Specification Version 1.0 page 152 includes parameters for address reachability.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rochberger, Rekieta and Blum as applied to claims 1, 2 and 5 above, and further in view of Salkewicz et al.

Rochberger, Rekieta and Blum teaches PNNI topology state information transfer between active and standby routing entities maintaining database synchronization. They do not teach the use of the OSPF protocol. Salkewicz teaches a database synchronization using either the PNNI protocol or the OSPF protocol (column 11 lines 29-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the OSPF protocol in place of the PNNI protocol disclosed by Rochberger using the communication system redundancy of Rekieta and the database synchronization aspects of Blum and Salkewicz. Such a structure provides alternative routing through an IP based network in place of the ATM network.

Allowable Subject Matter

5. Claims 15-22, 31-36, 41-43, 65-75 and 77-87 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 44-53 and 54-63 are allowed.

The following is an examiner's statement of reasons for allowance:

The claims include the limitation of a request for topology state synchronization which entails withdrawal/non-withdrawal of intermittent advertisement of local state information

through the use of a flag in the database summary packet. Such a limitation is not present in the PNNI Specification Version 1.0 which forms the basis of the protocol used in the disclosure, nor in prior art searches referencing the PNNI Specification and OSPF Specification.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L Shew whose telephone number is 703-305-8708. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

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A handwritten signature in black ink, appearing to be 'W. Chin', with a long horizontal line extending to the right.

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600